

OPERATING SUMMARY

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TOWN OF

FORT FRANCES

WATER POLLUTION CONTROL PLANT

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**FORT FRANCES
WATER POLLUTION CONTROL PLANT**

operated for
THE TOWN OF FORT FRANCES
by the
MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by
Plant Performance Unit
TECHNICAL SERVICES BRANCH
T. Cross, Director

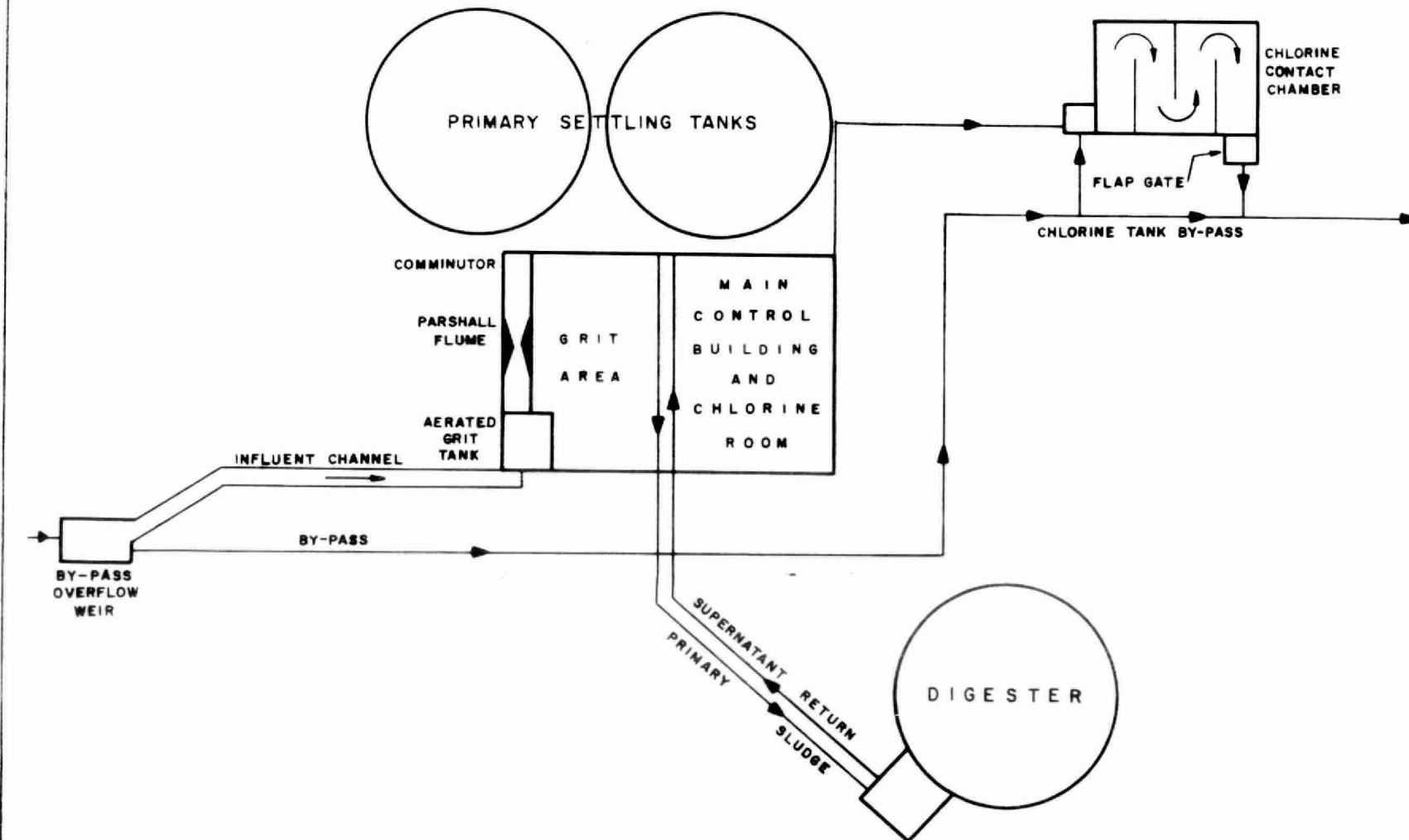
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FORT FRANCES W P C P
FLOW CHART



DESIGN DATA

PROJECT Town of Fort Frances WPCP

PROJECT NO.	2-0060-59	<u>PRIMARY TREATMENT</u>
TREATMENT	Primary	<u>Screening</u>
DESIGN FLOW	2.0 mgd	- Coarse bar screen (2")
DESIGN POPULATION	12,000	<u>Comminution</u>
BOD - Raw Sewage	130 mg/l	Type: Smith & Loveless Model 15R
- Removal	40%	<u>Grit Removal</u>
SS - Raw Sewage	180 mg/l	Type: Aerated; grit removed by
- Removal	60%	clamshell bucket
		Size: One 10' 5" x 10' 5" x 13' 9" swd
		(1515 cu ft or 9,400 gal)
		Retention: 6.8 min
		<u>Air Supply</u>
		Type: Roots-Connersville
		Size: One 100 scfm @ 9 psi
		<u>Primary Sedimentation</u>
		Type: Eimco Process
		Size: Two 40' x 40' x 10' swd
		(32,000 cu ft or 200,000 gal)
		Retention: 2.4 hours

Loading: Surface, 625 gal/ft²/day
Weir, 9,600 gal/ft/day

CHLORINATION

Type: W & T Model A-731
Size: 400 lb/day

Chlorine Contact Chamber

Size: 27' x 20' x 8.5' (avg)
(4,590 cu ft or 28,600 gal)
Retention: 20.6 min

OUTFALL

- to Rainy River

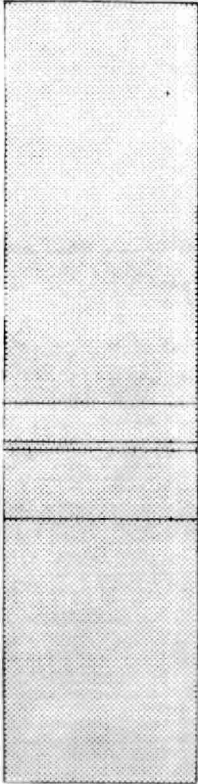
SLUDGE HANDLING

Digestion System

Type: Single stage with floating cover;
gas mixed
Size: One 40' dia x 25' swd (31,500 cu ft
or 195,500 gal)
Loading: 1.38 lb/cu ft/mo
Mixer: Roots-Connersville Type XA

ANNUAL COSTS

1974 OPERATING COSTS



● SALARIES & WAGES	50 %
● EMPLOYEE BENEFITS	5 %
● TRANSPORTATION & COMMUNICATIONS	1 %
● SERVICES	9 %
● SUPPLIES & EQUIPMENT	35 %
● ACQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	0 %
● TRANSFER PAYMENTS	0 %
● OTHER TRANSACTIONS	0 %

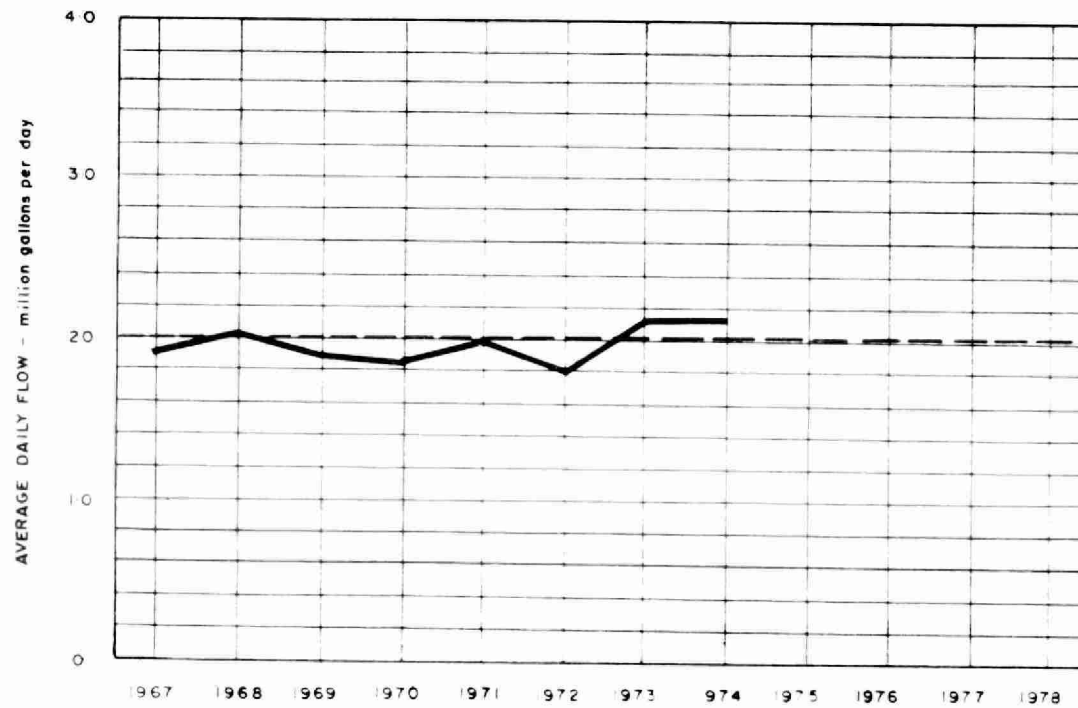
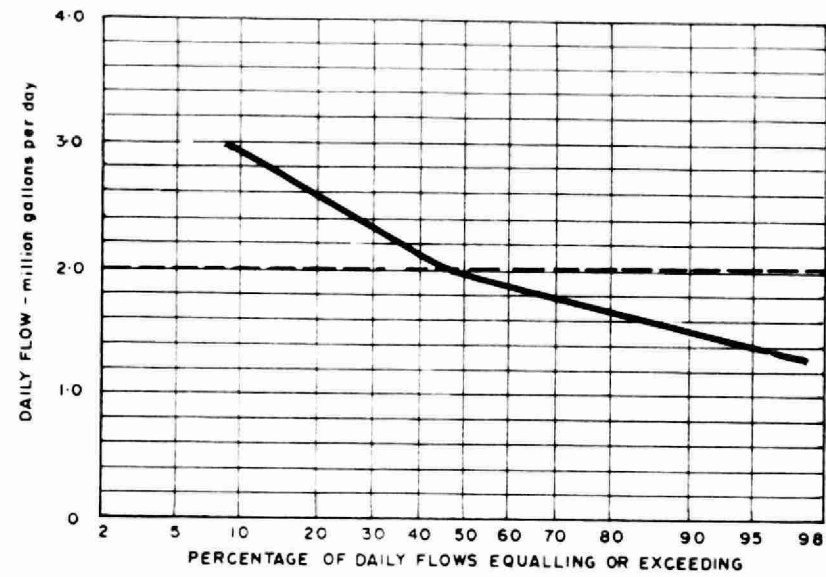
YEARLY OPERATING COSTS

YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			\$/M.G	¢/lb BOD
1969	693	38,742	56	13
1970	686	44,641	65	14
1971	715	51,519	72	21
1972	657	50,095	76	34
1973	769	51,243	67	32
1974	789	68,886	87	41

OPERATING EXPENDITURES

Regular Staff	\$	<u>34664</u>	\$	
Casual (Unclassified) Staff		<u></u>		
TOTAL SALARIES AND WAGES				<u>34664</u>
TOTAL EMPLOYEE BENEFITS				<u>3396</u>
TOTAL TRANSPORTATION AND COMMUNICATIONS				<u>996</u>
Insurance		<u>1953</u>		
Sludge Haulage		<u>2995</u>		
Repairs and Maintenance		<u>800</u>		
Other Services		<u>141</u>		
TOTAL SERVICES				<u>5889</u>
Machinery and Equipment		<u>1902</u>		
Chemicals		<u>9308</u>		
Utilities		<u>9752</u>		
Other Supplies and Equipment		<u>2979</u>		
TOTAL SUPPLIES AND EQUIPMENT				<u>23941</u>
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS				<u></u>
TOTAL TRANSFER PAYMENTS				<u></u>
OTHER TRANSACTIONS				<u></u>
GRAND TOTAL	GRAND TOTAL		\$	<u>68886</u>

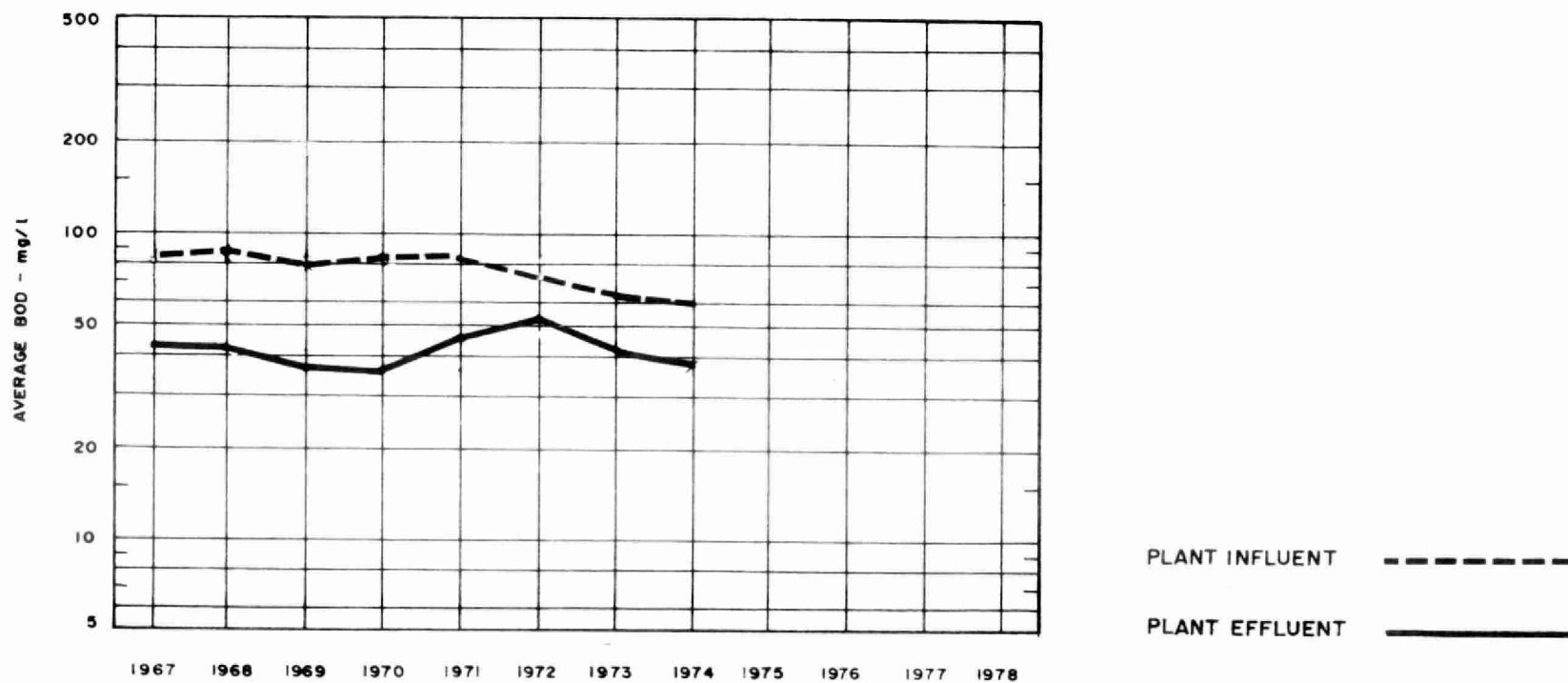
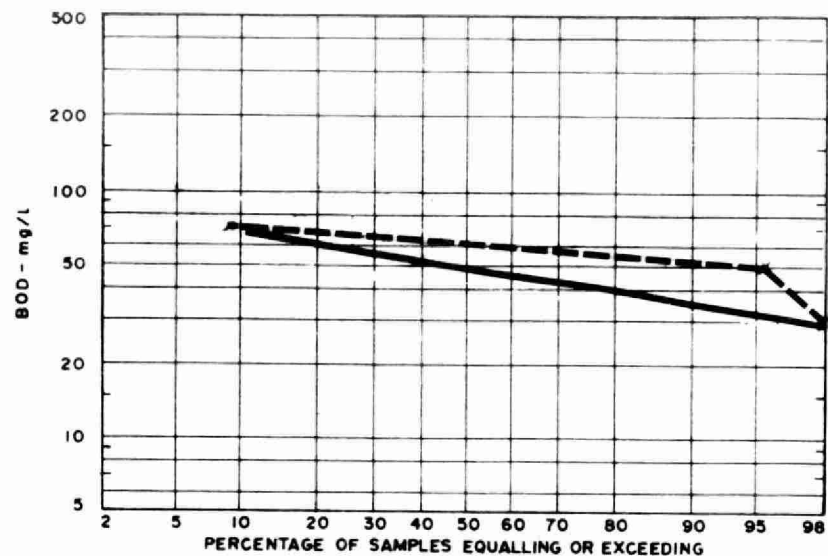
PROCESS DATA FLOWS



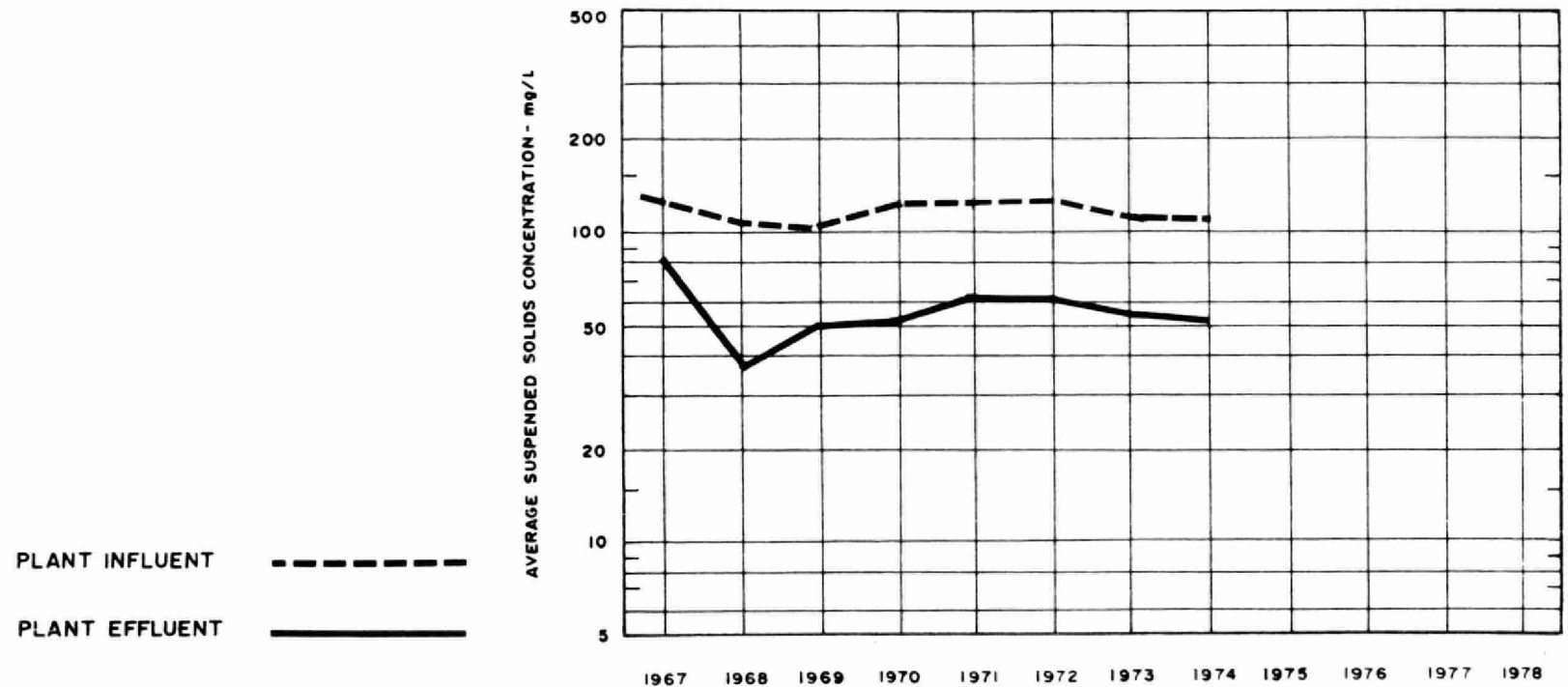
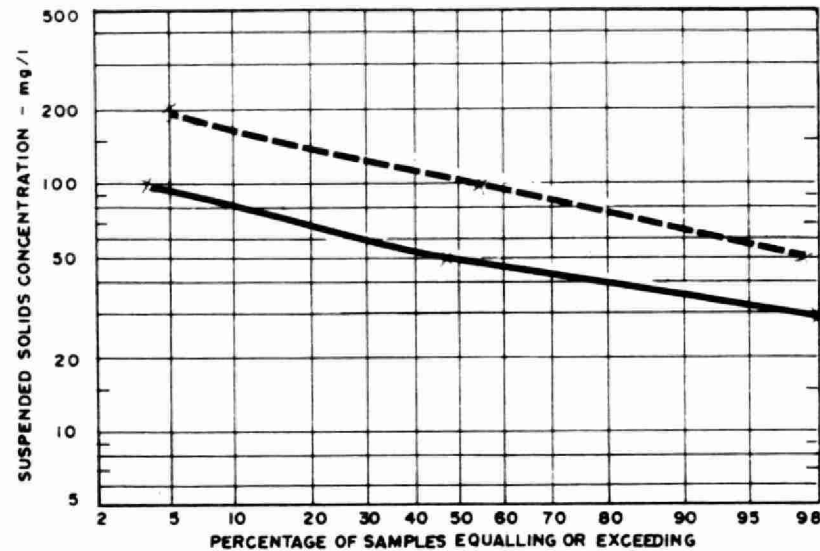
PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 ³ pounds	mg/l	mg/l	%	10 ³ pounds	mg/l P	mg/l P
JAN	61.00	2.0	2.1	58	35	40	14	94	49	48	27	4.6	3.3
FEB	52.58	1.9	2.2	65	39	40	14	87	42	52	24	3.8	3.1
MAR	61.90	2.0	2.5	61	41	33	12	114	45	87	42		
APR	76.15	2.5	3.3	62	40	35	17	121	52	57	52	3.6	3.7
MAY	99.70	3.2	4.4	57	38	33	19	142	67	53	75	4.8	2.3
JUNE	94.08	3.0	4.8	55	37	33	17	90	59	34	29	3.5	2.3
JULY	68.87	2.2	2.7	61	34	44	19	105	39	62	45	4.5	3.5
AUG	69.63	2.2	2.9	59	39	33	14	105	47	55	40	7.3	4.0
SEPT	51.31	1.7	2.5	56	38	32	9	106	44	58	32	4.2	3.9
OCT	56.01	1.8	2.2	55	40	27	8	121	60	50	34	3.8	3.1
NOV	50.02	1.7	1.9	80	50	37	15	123	53	59	37	4.0	2.9
DEC	47.90	1.6	1.7	65	55	15	5	109	56	49	26	4.5	3.9
TOTAL	789.15	-	-	-	-	-	166	-	-	-	466	-	-
AVG.		2.1	MAXIMUM 4.8	60	39	35	14	110	51	54	39	4.4	3.2
No. of Samples	-	-	-	43	42	-	-	64	63	-	-	11	11

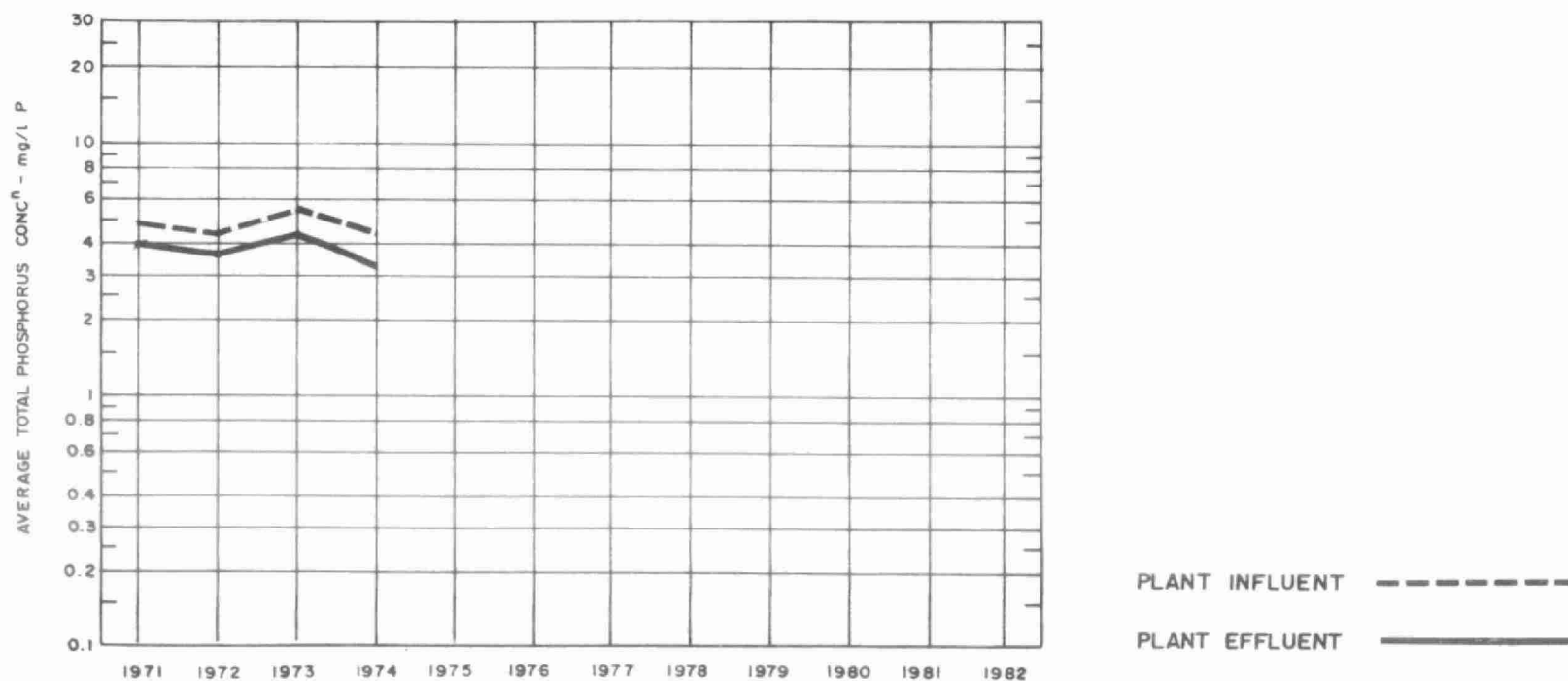
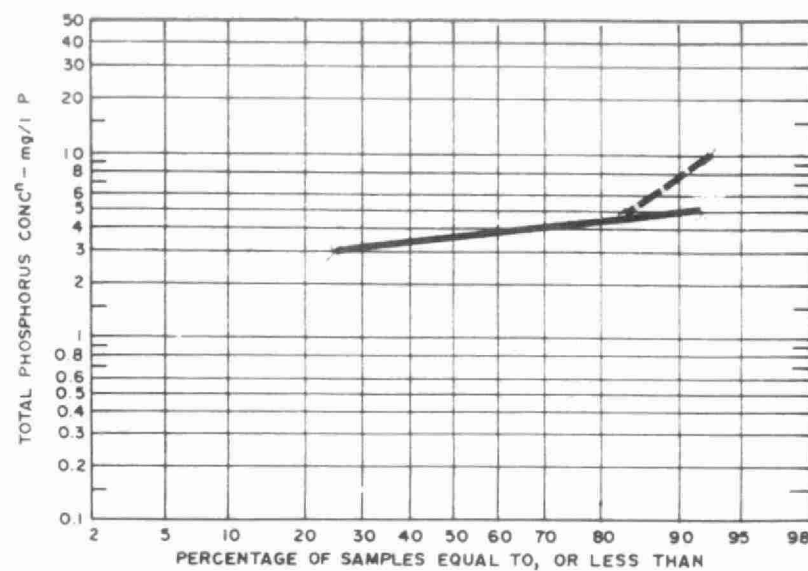
BIOCHEMICAL OXYGEN DEMAND



SUSPENDED SOLIDS

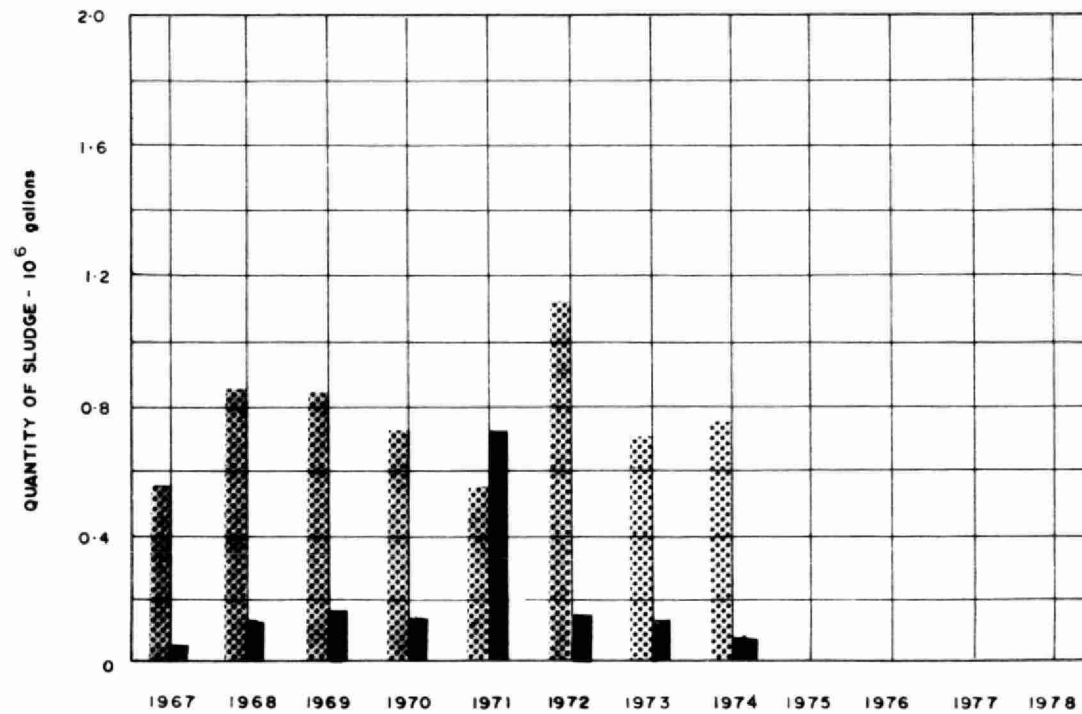
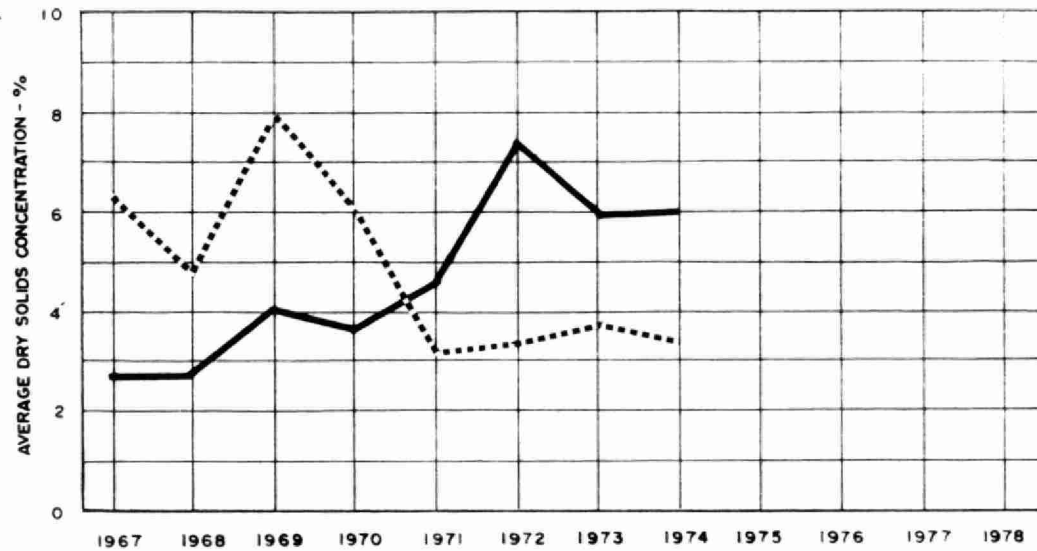


PHOSPHORUS



DIGESTION

RAW SLUDGE
DIGESTED SLUDGE —————



RAW SLUDGE TO DIGESTER
DIGESTED SLUDGE REMOVED —————

TREATMENT DATA

MONTH	GRIT QUANTITY REMOVED cubic feet	CHLORINATION		SLUDGE DIGESTION and DISPOSAL							
		CHLORINE USED 10 ³ pounds	AVERAGE DOSAGE mg/l	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT	SLUDGE HAULED cubic yards
				QUANTITY 10 ³ gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	QUANTITY REMOVED 10 ³ gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	TOTAL SOLIDS %	
JAN	5	2.4	3.9	52	2.2	69	11	5.2	54	.04	66
FEB	18	2.2	4.2	47	2.6	70	14	4.3	59	.02	84
MAR	48	2.6	4.3	52	2.7	69	4	3.0	60	.32	24
APR	91	2.7	3.6	59	3.6	60	16	6.0	44	.08	96
MAY	155	2.1	2.1	74	4.1	50	0	4.7		.10	0
JUNE	197	3.0	3.2	67	3.5	49	21	7.3	38	.03	126
JULY	20	3.0	4.3	57	3.4	56	15	5.7	44	.06	90
AUG	45	2.5	3.6	74	4.4	59	14	7.0	36	.06	84
SEPT	8	2.6	5.1	82	2.9	64	18	7.2	43	.04	108
OCT	7	2.7	4.8	72	3.5	69	9	6.1	44	.05	54
NOV	4	2.7	5.3	55	3.6	67	15	5.7	41	.03	90
DEC	15	2.7	5.8	56	3.4	72	7	5.7	39	.64	42
TOTAL	613	31.2	—	748	—	—	144	—	—	—	864
AVG.	.8 cubic feet/mil gal	2.6	4.0	62	3.3	62	12	6.0	45	.11	72

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